# للان BINODES WHITEPAPER

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# 1. Introduction



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# 1. Introduction

Blockchain technology has transformed the landscape of digital transactions, introducing Bitcoin, the first transparent, secure, and decentralized cryptocurrency. This groundbreaking technology has enabled innovative business solutions, like the Ethereum network's use of smart contracts. However, despite its potential, the practical adoption of blockchain in business remains hindered by its complexity and lack of clarity.

A key component in this field is the concept of smart contracts, which rely on cryptocurrency utility tokens. Nevertheless, a significant challenge persists: seamlessly integrating cryptocurrencies into conventional business operations. Currently, the process of buying, transferring, and exchanging cryptocurrencies with fiat currency is complex and cumbersome for many users. Addressing these real-world hurdles, Ubinodes is tackling this issue directly.

While some companies remain unaware of this emerging technology, others are taking a wait-and-see approach. In contrast, Ubinodes has fully embraced blockchain technology, not waiting for its complete usability. Our mission is to align our business structure with blockchain principles, using publicly available components of the technology.

Through innovative user experiences, we aim to solve the challenges of cryptocurrency usability and adoption. In the past, we attempted to simplify business operations through traditional centrally managed agreements. However, a major obstacle was creating a cohesive ecosystem between consultants and manufacturers, even with a well-defined project plan for scalability.

# **Genesis of Ubinodes**

Before becoming Ubinodes, we were known as Love4aviation, an aviation importing company founded in New Zealand in 2007. With over a century of industry experience, we expanded our operations globally, working with partners in the United States, United Kingdom, Germany, and France. Over time, we discovered a passion for consulting and international trade that went beyond aviation. This led to our transformation from Love4aviation to Ubinodes.

At Ubinodes, we handle different consulting projects and connect a network of consultants. This network uses consensus-based agreements to ensure all transactions are legally sound. The variety of services we provide to a diverse range of clients drives significant growth.

Our distributed network architecture reduces developmental constraints on Ubinodes. This complex network allows for easy information sharing, creation of edge networks, efficient resource allocation, and faster progress in our consultancy services.

#### The Ubinodes Vision

Ubinodes is a complex and expandable network that helps share information and do deals. It lets us create and run different consulting projects together. By building trust among users, Ubinodes wants to make international business networking better for everyone.

Manufacturers often find it tough to get funds, especially with extra costs for consultancy services. Our solution isn't just about easing this burden; we want to build a network of expert consultants who add value for both manufacturers and consultants. This helps Ubinodes grow naturally and adapt to changes.

# A Paradigm Shift in Consultancy

Unlike the complicated process of adding new features to a centralized system, our distributed system lets consultants offer their unique services easily. This teamwork brings in extra money through a business-focused model. Instead of focusing solely on making profits like a monopoly does, our model encourages consultants to share what they know. In return, they earn money through our decentralized system, which is different from the traditional monopoly setup.

In this new system, every consultant uses their skills to help with projects for manufacturers or other consultants. Whether it's providing consultancy services, writing, graphic design, or freelancing, Ubinodes offers a global platform to showcase these services to those who need them. Instead of promoting competition, this system relies on sharing work to achieve the best results.

# **Optimizing Business Transactions**

The distributed model we use is crucial for achieving the best performance in business transactions. Traditional consultancy methods have only partly solved performance issues. So, we've used parallel chains and consensus access to overcome these problems. Solutions might come from different chains, or important skills might be highlighted during projects. This flexibility allows us to use various methods for different projects, while the integrated consensus ensures that data flows smoothly and we can discover solutions as we go.

# Dynamic Data Transmission and Adaptation

Our approach to data transmission is adaptable, customized to meet the unique needs of each project. This involves utilizing various IT tools and communication channels, each following its specific protocols and requirements. As our organization grows rapidly and our project needs evolve, we consistently improve our processes. We leverage real-time,

Page **5** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). reliable automated information exchange tools, along with automated financial transactions facilitated through decentralized networking.

The beauty of this decentralized network solution is its capacity to function without relying on extensive data centers for data synchronization and management control. Instead, instructions effortlessly move through a network of distributed pathways.

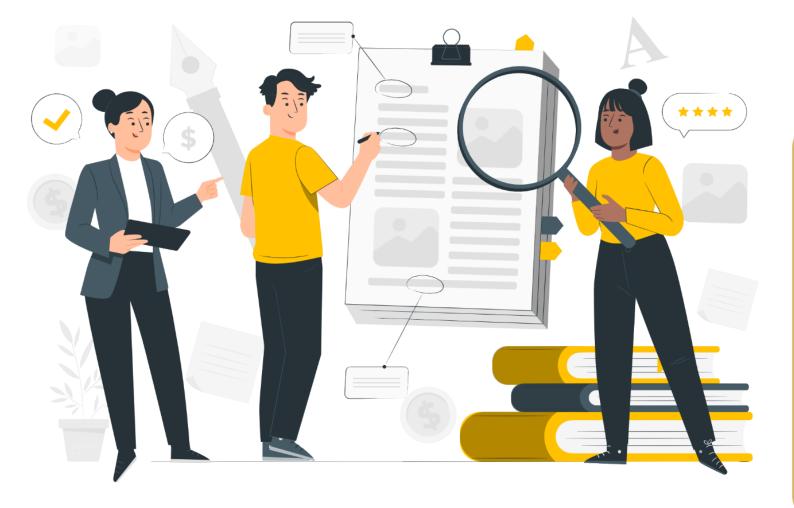
#### Fostering Mutual Understanding: The Essence of Consensus

At the heart of this model is the goal of fostering mutual understanding among nodes. The consensus-driven agreement acts as a strong standard for service quality, remaining effective as long as all parties uphold honesty, even when faced with network irregularities. As the network operates in an open and public setting, it's essential to have a strategic mechanism to verify new consultants and motivate nodes to honour agreements. Ubinodes is carefully designed to address the complex challenges of knowledge transfer within consulting markets.

# Blockchain-Powered Ingenuity: A New Era of Consultancy

Ubinodes is an innovative platform built upon the foundational principles of Blockchain: decentralization, open source, reliability, and efficiency. In this system, all stakeholders benefit from transactions and contribute to shared gains. Operating as a transparent and open system, Ubinodes aims to drive the advancement of consultancy. Its distinctive approach involves linking different chains through a consensus-based model and economic incentives, creating an efficient and decentralized workspace.

# 2. Definitions of Key Terms



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# 2. Definitions of Key Terms

#### Node

In the Ubinodes network, a Node acts as the foundational element, forming the backbone of the system. These nodes encompass a variety of entities, including consultants, customers, developers, and any other participant involved in transactions. Nodes are responsible for crucial tasks such as generating, validating, and storing transactions. Each node is identified by a unique message or signature.

We intentionally refrained from using the term "agent" to avoid potential confusion, as it carries established meanings in traditional business contexts, often associated with commission-based roles. Instead, we chose "node" to visually represent the organizational structure of our network. This decision contrasts with the more abstract term "party," commonly used in technical documents to refer to entities external to the network. Nodes engage with a defined group of other nodes for a specified task within a specific timeframe.

#### Oracle

An oracle serves as a specialized node within the network, tasked with identifying, verifying, and presenting events to the network. These events are essential for enforcing contract terms, which only activate when predetermined conditions or events occur.

Oracles, similar to data feeds, are third-party services tailored for integration into network contracts. They provide external data and trigger contract execution based on predefined criteria. Oracles primarily ensure contract specifications are delivered securely and reliably.

When a specified condition is met, the contract undergoes a state change, prompting a corresponding action such as fund disbursement or service provision. For instance, in the import/export sector, an oracle could inspect goods before customs clearance to ensure compliance. Oracles can offer their services to both organizations and their clients.

#### Party

A Party signifies an external entity situated outside the network's boundaries. Although not directly integrated into the network, parties interact with specific nodes or a subset of nodes within predetermined timeframes and project parameters. These interactions adhere to project regulations. For example, a shipping agent or a storage facility serves as typical examples of a party.

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# Transaction

A Transaction involves the exchange or transfer of various elements, including goods, services, data, information, or funds. Any activity or action that affects or involves two parties or objects, jointly impacting both entities, is considered a transaction.

#### Witness

In its capacity as a node, a Witness bears the duty of validating transactions, often within contract contexts, through observant and non-intrusive means. These neutral third-party entities silently observe project execution and delivery, refraining from interference but retaining the option to raise inquiries or request information.



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# 3. Overview of the Industry Market

FedEx conducted a comprehensive study revealing a concerning trend: 62% of European manufacturers refrain from exporting, collectively facing an average profit or loss of €647,000 each. Encouragingly, 49% of these manufacturers express intentions to start exporting.

Many of these potential exporters are eager to utilize Ubinodes' services, with initial groundwork already laid through productive interactions with potential clients. A notable trend emerges as these potential collaborators seek knowledgeable and reliable partners to enhance their operational efficiency.

We anticipate a diverse clientele, including both cryptocurrency and traditional customers, with the specific composition evolving alongside cryptocurrency adoption.

The integration of cryptocurrency and Blockchain into international services offers numerous benefits. This fusion facilitates seamless work exchange among consultants and provides a platform for dispensing consultancy-driven micro-services to clients through secure IT tools, all powered by smart contracts. This contrasts with the current landscape, where few international consulting micro-services offer such adaptability due to rigid contracts.

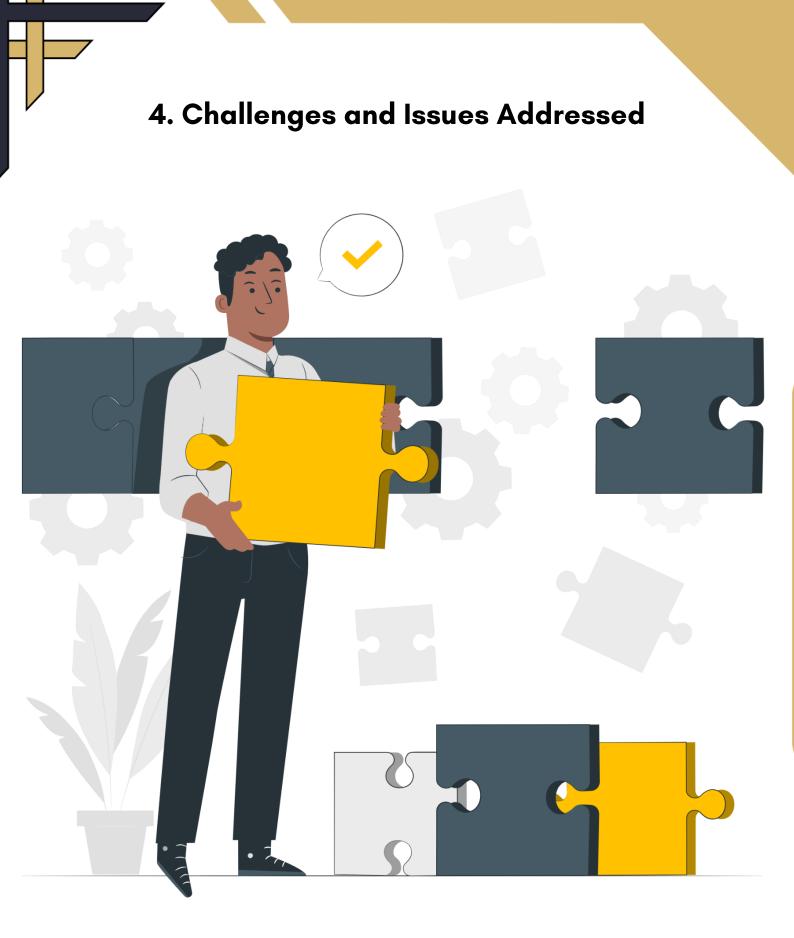
Ubinodes, characterized by its open and decentralized nature, has the potential to revolutionize knowledge dissemination unlike closed systems. Its foundational ethos is rooted in advancing the greater welfare of humanity.

At its inception, Ubinodes will provide consultants with a range of IT tools, fostering their autonomy and effectiveness. The network's openness and economic incentives are expected to create a cycle where consultants and manufacturers refer others to join.

Ubinodes is strategically positioned to gain a first-mover advantage. It aims to become the go-to hub for international business consultancy micro-services, drived by a critical mass of high-quality consultants. Interactions within the network generate a synergy of knowledge, setting Ubinodes apart from rival platforms. However, achieving this requires globally-recruited consultants with specialized expertise and a thriving community of consultants and customers.

Page **11** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). In essence, Ubinodes is at the forefront of transforming consultancy through openness, innovation, and a commitment to collective progress.

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# 4. Challenges and Issues Addressed

Consultancy and freelancing have proven their worth across different industries, but their application in international business is still limited. The potential for highly distributed and decentralized consulting, ideal for projects that cross borders, has yet to be fully realized. Currently, the consultancy and freelance landscape faces significant challenges, including:

# Lack of Standardization

The existing ecosystem suffers from a lack of standardized practices. Each consultant uses their own datasets, leading to fragmented information flow among project nodes. This lack of coherence makes it difficult to develop projects across multiple endeavours, increasing implementation challenges.

# Inefficiency

The current centralized model is inefficient because it relies on a central authority. This setup requires all transactions, including authentication, to go through this central hub. As project volumes increase, the system becomes overloaded, causing delays in delivery and reduced efficiency.

# **Escalating Costs**

Centralized systems come with significant infrastructure and maintenance expenses, including large-scale servers, cloud services, and managerial staff. As the consultant base grows, communication costs also rise dramatically, leading to high consulting fees.

# **Security Vulnerabilities**

Centralized networks pose inherent security risks, requiring strong measures to secure central servers. Nodes located in jurisdictions with questionable judicial and political integrity face increased risks. Vulnerabilities affecting consultants and IT tools have ripple effects across the entire network, even extending to external providers.

# **Privacy Safeguarding**

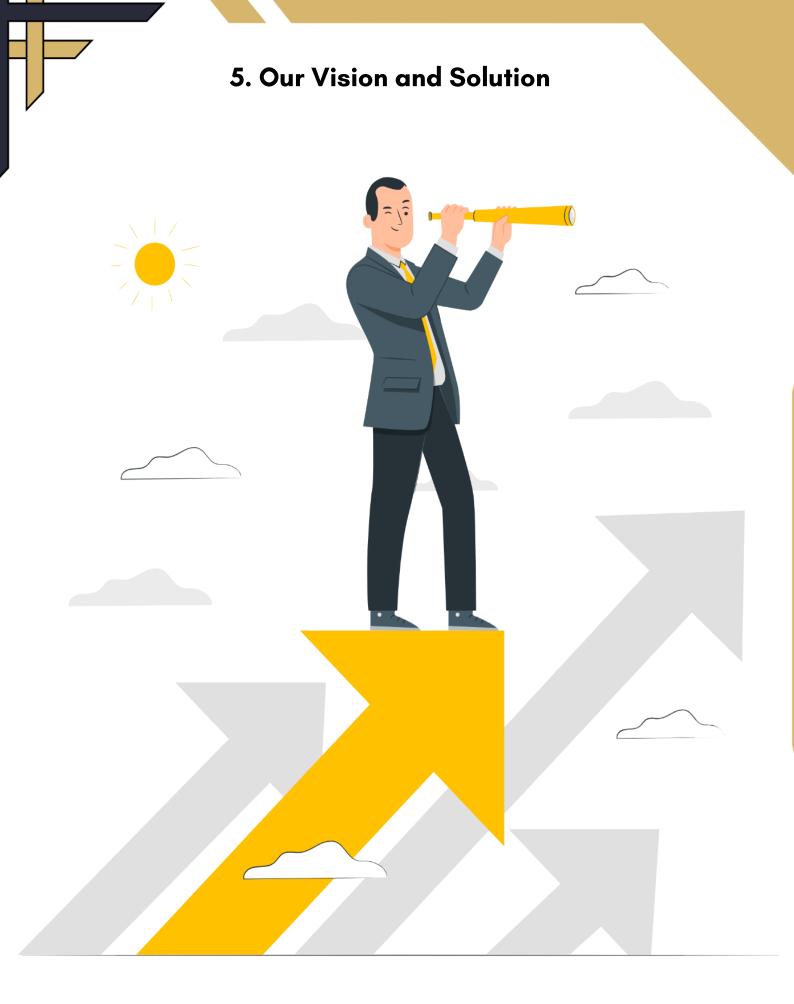
Current centralized networks frequently require large amounts of user data, storing it as they see fit. Users often realize the value of their data only after a privacy breach has already happened. Consulting entities require access to private information, including

Page **14** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). financial and political details. Entrusting such sensitive data to a centralized network is risky, as external threats could compromise it. Our approach takes a compartmentalized approach, moving away from the traditional need-to-know model.

# **Cloud Service Intricacies**

The increase in online service usage is matched by a concerning rise in the demand for personal data, posing a global threat to user privacy. Big tech companies like Google, Facebook, and Yahoo have become massive entities profiting from user data. While entrusted with data security and user privacy, their centralized models are not suitable for advanced technologies like Blockchain. Centralized consulting firms heavily rely on surveillance-heavy

cloud services, adding complexity to the landscape. In response to these widespread challenges, Ubinodes aims to introduce a transformative approach, addressing current shortcomings through an innovative and decentralized model.



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# 5. Our Vision and Solution

#### 5.1 The Inspiration behind Our Endeavour

In the pursuit of a more progressive commercial landscape, humanity faces various complex challenges. One significant concern is the inadequacy of the current global economic framework to facilitate a smooth transition into this new commercial era. What's needed are fresh perspectives – economic structures and dynamics that are innovative, adaptable, open, and responsive.

Internet 3.0 offers a powerful tool for managing transactions in this evolving commercial landscape. However, effectively leveraging the internet requires a strategic approach. The concept of a Distributed Autonomous Organization (DAO), designed to facilitate interactions between consultants and external customers, has the potential to promote the emergence of collective knowledge. The creation of this DAO is crucial and should be rooted in affirmative principles such as:

#### **Democratic Governance**

Endowing the community with a voice within the system serves as a compass, guiding the system's actions to benefit the community at large.

#### **Nurturing Innovation**

Paving the way for innovative newcomers to join the network while cultivating an environment that encourages consultants to contribute in ways that amplify collective knowledge.

# **Strategic Focus**

Directing a significant portion of the network's endeavours towards causes poised to enhance its overall welfare.

Ubinodes stands as the embodiment of these principles, a platform meticulously designed to fulfil the outlined requisites:

- Providing consultancy services to corporations, individuals, and organizations.
- Cultivating the emergence of distributed general knowledge.
- Harnessing collective knowledge to the advantage of both consultants and manufacturers.

Ubinodes is inherently crafted to possess value within the existing framework while simultaneously laying the foundations for a self-evolving "collective knowledge network." This network has the potential to transcend present limitations, offering broad knowledge and ethical dimensions.

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# 5.2 Our Solution to Address Market Gaps

Ubinodes effectively addresses a major gap in today's economy and technology: the need for efficient distribution channels, which are crucial for all businesses. Traditional commission based systems fail to meet this need, and even large corporations have trouble finding enough consulting experts.

Ubinodes offers an automated system that helps businesses connect with local distribution channels and create customized solutions. By providing secure communication channels and powerful business tools, Ubinodes supports channel customization and network accessibility. It also reduces redundancy in documents and communication, streamlining the import/export process.

In line with these goals, Ubinodes adopts an open network approach. Becoming a node depends on a shared commitment to organizational principles and logical economic payment flows.

This approach is similar to successful platforms like Uber and Airbnb, which serve markets with unmet needs. For Ubinodes, the untapped resource is the large number of consultancy experts worldwide, while the market in need includes the 97% of businesses that cannot afford dedicated teams of expatriates.

Ubinodes is ready to fill this gap, bringing a new era of consultancy services that are efficient, innovative, and cater to diverse needs.

# 5.3 The Ubinodes Product: A Resilient and Adaptable Business Architecture

Ubinodes works like a peer-to-peer network, where active members are called "nodes." This unique setup separates the technology from the smart contract, making it easier to add new services. From a management perspective, Ubinodes functions as a distributed autonomous organization, constantly creating new contracts to help business consultants interact in the market. This adaptable design includes several important features:

#### Interoperability

Ubinodes boasts the ability to seamlessly interface with a multitude of existing distribution channels, enhancing its adaptability and reach.

#### **Data Sovereignty and Privacy**

Robust data control and sharing mechanisms are complemented by privacy-enabled controls situated at the pinnacle of the network hierarchy.

#### Modularity

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# Multi-Channel Functionality

Ubinodes has a new feature that allows the creation of separate, independent channels within the network. This detailed approach ensures each channel is secure and reliable. Only the parties involved in a transaction keep the transaction data, which protects data privacy and sovereignty. This feature allows for the creation of specific channels for particular tasks, involving only the relevant network members.

#### **Tiered System**

After the initial authentication to join the network, each transaction is validated and secured through Ad-Hoc authentication. Ubinodes also allows for different access levels, so you can create specialized nodes (like for auditing or supervision) to monitor specific transactions without directly participating in them.

#### **Fault Tolerance**

Ubinodes is carefully designed to be fault-tolerant. It uses data distribution and selfstabilizing mechanisms to ensure that tasks keep running smoothly, even if there are issues. This resilient approach helps prevent complete failure and minimizes disruptions.

Working with various partners, Ubinodes aims to create new ways to deliver consultancy services and improve global knowledge sharing.

As the network evolves, it aims to transition into a truly distributed and autonomous organization, diverging from conventional corporations with its commitment to openness.

At its core, Ubinodes provides powerful business tools for consultants to efficiently complete tasks, exchange data, and offer consultancy services. These tools are also available to manufacturers who need consultancy services. Consultants join the network through a peer-based selection process, allowing them to both provide and request consultancy services.

In the Ubinodes system, transactions are done using their own token called the Ubinodes token. Token holders can use these tokens to buy things from the marketplace. In the future, token holders might also get to take part in making decisions about how the system is run.

In summary, Ubinodes is a new economic platform meant to improve human knowledge through a unique and ethical self-organizing system. It aims to offer valuable consultancy services worldwide while working toward its goals. Beyond just changing how

Page **19** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). consultancy works, Ubinodes wants to create a smarter global economy that helps all parts of life.

Bringing together knowledgeable consultants, collective decision-making, and a benefitfocused approach, Ubinodes speeds up the evolution of the business world. Ubinodes aims to drive humanity towards greater progress, intelligence, mutual benefit, and interconnectedness. Its impact goes beyond providing practical consultancy services and business structures, influencing the core principles of business theory and practice.

# 5.4 Services: Empowering Global Business Connectivity

Ubinodes is a ground-breaking distributed over-the-counter (OTC) international business network, the first of its kind. Our initial offering includes a wide range of consultancy services that can be easily purchased using crypto currency. Ubinodes provides:

# IT Tools and Contracts

Equipping users with essential tools and contracts to facilitate seamless interaction with consultants.

# **Token-Based Economy**

A secure token-based system for handling financial transactions with consultants, ensuring smooth and efficient exchanges.

# **Democratic Governance**

A transparent mechanism that allows network participants to collaboratively adjust economic parameters for collective benefit.

Transactions can happen between consultants in the network or with outside parties. To encourage a busy market, Ubinodes will not charge any transaction fees. Instead, the network will be supported by participants who democratically decide to allocate some newly created tokens to maintain the network and its tools.

Ubinodes' main service is "providing access to markets." Our clients are businesses from various industries looking to expand into new markets. The crypto economy is already worth over \$400 billion, covers many different areas, and is growing quickly.

We aim to become the top provider of consultancy services in this fast-growing sector. We expect companies involved in import and export to be among the first to use Ubinodes to improve their operations.

Page **20** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). Ubinodes is more than just a service; it's a platform that changes how businesses connect, work together, and succeed globally.

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#### 5.5. Delivering Unique Value

What sets Ubinodes apart and encourages clients to choose us over alternatives? Let's break it down:

• **Data Security Priority:** Ubinodes guarantees unwavering security for user data within the organization, ensuring peace of mind for all stakeholders.

• **Top-Tier Consultants:** Our network boasts elite consultants, meticulously selected through rigorous screening by Ubinode's HR experts before joining. This ensures clients access the best expertise.

• **Synergistic Consulting:** Consultants collaborate within the Ubinodes network, fostering a dynamic synergy that enhances the quality of consulting services.

• **Skillful Matchmaking:** Advanced mechanisms align clients with consultants possessing the precise skillset needed for optimal service delivery.

• **Streamlined Communication:** Consultants benefit from easy and flexible communication tools, promoting efficient collaboration.

These benefits encourage consultants to choose Ubinodes over other platforms or their own websites. By offering a new service on Ubinodes, consultants can tap into a vast pool of distributed knowledge and connect with other experts. Additionally, Ubinodes' discovery features give consultants access to a large customer base.

Individuals can also hold Ubinodes tokens, which represent shared values focused on the organization's growth and success. Ubinodes thrives on building a tight-knit community and a self-sustaining environment.

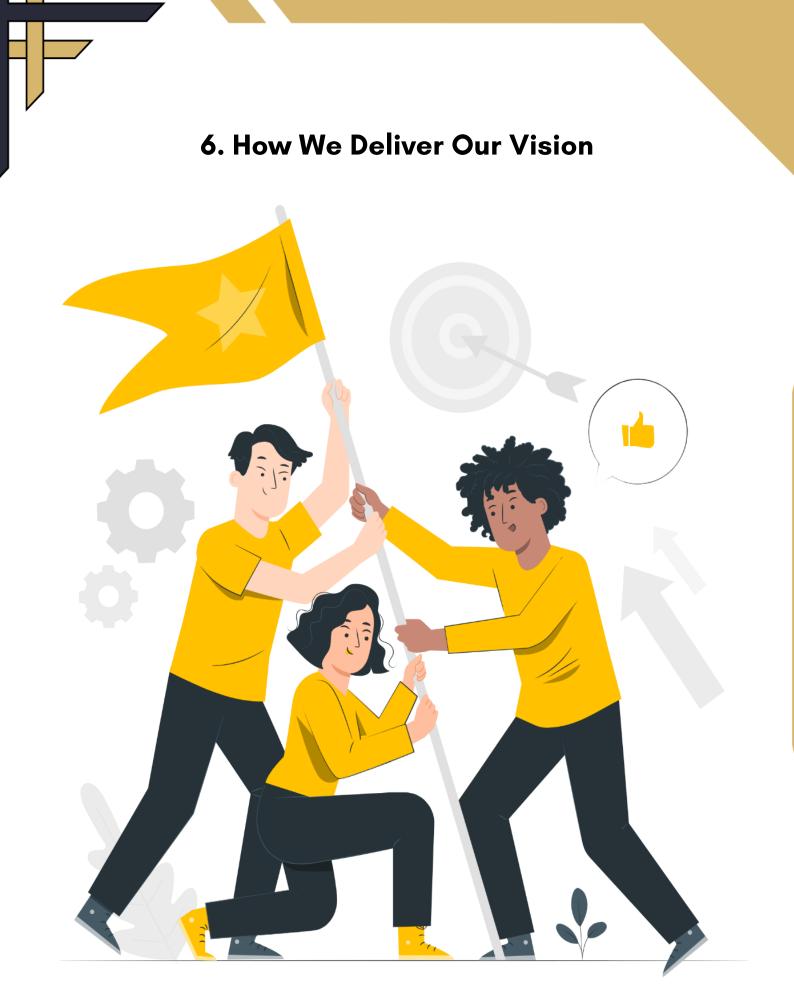
As blockchain technology spreads, these communities are expected to increase in both number and quality. Smart contracts will handle most tasks, reducing the need for centralized agencies and intermediaries, and speeding up business processes.

Ubinodes aims to lead by connecting communities, creating an ecosystem where everyone can work together in real-time using smart contracts. As more communities join Ubinodes, transactions will increase, providing maximum benefits for all members.

In the global capital market, many transactions go through complex intermediaries and centralized institutions, causing long processes and complicated back-office work.

Blockchain is transforming the insurance industry by streamlining claims and payment processes, lowering costs, improving transaction efficiency, and greatly enhancing the consumer experience and satisfaction.

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# 6. How We Deliver Our Vision

#### 6.1. Transitioning to a Decentralized Organization

Imagine Ubinodes as an Operating System, quietly shaping the environment where actions happen. It acts as a foundational platform, setting the rules for interactions, organizing processes, and distributing power among nodes.

Many blockchain projects focus on decentralization but struggle with real-world adoption due to technical and business challenges. Ubinodes aims to overcome these obstacles, driving society toward true connectivity.

#### 6.2. Dynamic Network Operations

Ubinodes facilitates several core services, including:

• **Consultancy Exchange:** Consultants offer their services in exchange for Ubinodes tokens.

• Skillset Matching: Consultants identify fitting skillsets for specific projects.

• **Secure Transactions:** Goods and services are securely exchanged using Ubinodes tokens.

• Governance Participation: Engaging in votes on critical governance matters.

Illustrating the two transaction types mentioned above, standard legal agreements and IT tools are integrated into smart contract templates, with numerous templates available for use. A range of services are covered, such as:

- Translating documents: Advertisements, legal papers, manuals, and more.
- Developing localized websites: Incorporating language and cultural nuances.
- Distributing manuals: Equipping consultants and manufacturers.
- Providing secure communication tools.
- Issuing legal documents and smart contracts.
- Facilitating cryptocurrency and Blockchain understanding.
- Collaborating on shared resources like marketing efforts.

Page **24** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). The range of services provided will be varied, and the Ubinodes community will work together to choose and update them using democratic methods. People who want to use the service marketplace will get Ubinodes tokens when they join the network.

# 6.3. Integration with Blockchain Technology

Blockchain technology allows for online asset transfers without the need for intermediaries like banks. It uses a shared ledger that is updated by agreement within the community. Smart contracts, which are self-executing code on the blockchain, automate transactions according to preset conditions.

Ubinodes uses smart contracts to build a cooperative network of consultants. It can work on different decentralized systems that meet basic requirements, without needing special crypto currency or blockchain advancements. Smart contracts are customized to lower network operational expenses.

Ubinodes is flexible and can collaborate with different cryptocurrencies and distributed ledgers, not just Bitcoin. Communication happens directly between parties.

The organization offers tools for:

- Consultant Interaction: Sharing information and negotiating service terms.
- Token-based Services: Exchanging Ubinodes tokens for services.
- **Democratic Governance:** Participating in decision-making.

People who sign contracts, whether they are part of Ubinodes or not, are the ones who carry them out. Right now, straightforward contracts are preferred because they are clear, easy to check, and flexible. They allow for flexible interactions between peers, which is a fundamental idea for a distributed autonomous organization. Because cryptocurrency is changing quickly, Ubinodes might switch between different platforms as technology improves. Decisions about changing platforms are made democratically.

Ubinodes focuses on two main tech areas: connecting nodes to blockchain apps and ensuring network compatibility. Joining Ubinodes is user-friendly, with guides for consultants and manufacturers. Initially, Ubinodes uses Waves platform for its blockchain, but this might change later on.

# 6.4. Evolution from Marketplace to Collaborative Network

In Ubinodes, users can use tokens to buy services directly from consultants in simple transactions. These consultants work independently, but some tasks might require teamwork from multiple consultants, all working together for Ubinodes' progress.

Additionally, the platform will develop with input from consultants worldwide, bringing in new ideas. Everyone is encouraged to join in and gain from Ubinodes' growth.

Page **25** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). Sometimes, a job might need help from several consultants with different skills. This creates complex networks of dependence, where services are traded for payment. These networks, called "Offer Networks," bring together the right mix of consultants to get the job done.

In Ubinodes, the key is finding the right consultants for the job and earning part of the payment for their work. As Ubinodes grows, current consultants will keep bringing in new members to fill any skill gaps.

# 6.5. Strategies for Success

To comprehensively address the requirements, Ubinodes employs the following strategies:

**1. Blockchain Empowerment:** Utilizing Blockchain technology to securely store data assets, information, and conduct transactions.

**2. Decentralized Network:** Adopting a decentralized point-to-point network for ensuring secure and dependable network communication.

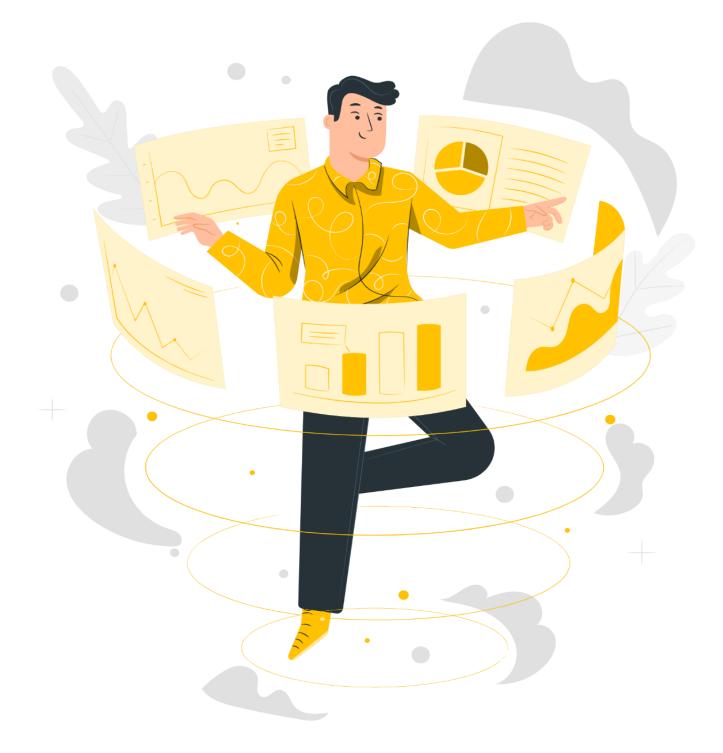
**3. Ubinode's Integration:** Employing Ubinodes for tasks such as identity verification, asset ownership, digital asset processing, and data protection.

**4. Scalability:** Operating on mainstream hardware and adhering to established standards, enabling limitless expansions to accommodate growing demands.

**5. Continuous Innovation:** Pursuing constant exploration of emerging technologies to maintain a pioneering position within the Blockchain network.

Traditional centralized hierarchical structures lack the efficiency and adaptability required to achieve the goals set by Ubinodes.

# 7.0. Understanding the Inner Dynamics



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# 7.0. Understanding the Inner Dynamics

Explaining how an organization functions can seem unfamiliar to business professionals because of different terms and viewpoints. In an autonomous organization, the rules are part of the code, often called the Constitution or Agreement. So, the design is based on a systemic approach. Understanding this concept helps set up standards and tools that make sure everyone follows the rules.

# 7.1. Unveiling Self-Discovery

Ubinodes' network structure is flexible, breaking geographical barriers. Consultants can work together on projects no matter where they are, which encourages self-improvement and grows the network's knowledge. Importantly, no work is wasted; even if a project stops, it can still help start another one, benefiting both consultants and manufacturers.

For example, the traditional top-down company model might not be the best fit for Ubinodes. In these structures, rules are based on roles and are uneven, focusing on authority and control. Complicated interactions between different levels and roles run the show. If a consultant leaves, it could harm a project and the organization. Finding a replacement takes time and money but might not work out well.

At this point, the idea of "game play" highlights the crucial role of self-discovery in our independent and distributed model. So, most of our design choices focus on making this mechanism work better. Following the rules of the game, consultants team up for projects through random searches. This ensures the best results, and everyone gets rewarded. This creates a cycle where the organization keeps getting better.

Ubinodes regularly adjusts its settings to reduce the gap between expected and actual project results, aiming for the best outcomes. This involves fine-tuning the settings using a method called gradient descent on a loss function. This helps get rid of less effective methods and focuses on more rewarding ones for future rounds of self-discovery.

Think of the self-discovery process like a tree of collaborations. The person starting the project is like the tree's root, and the search for consultants spreads out like branches to the leaves. Consultants look at and improve expected results while thinking about other options. Each simulation includes choosing details for each consultant, with their importance increasing over time.

This boosts the likelihood of putting together the right team and reaching top-notch performance using the skills in the network. The search creates a web, showing the chance of collaborating across the network. Ubinodes keeps a constant, decentralized network, removing the need for HR manager approval.

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# 7.2. Empowering Self-Recruitment

The basic rules for consultant rotation and project dynamics stay the same, allowing the self-discovery process to start randomly. This randomness helps compare potential outcomes with industry standards and different biases (cultural, historical, etc.). No prior training or set positions are needed. Unlike traditional models that depend on trained recruiters and performance measurements, Ubinodes works without formal training and strict performance evaluations.

This decentralized approach allows existing consultants to form teams and recruit new consultants without needing an HR manager or management team. The self-play process creates internal teams and handles external recruitment using the latest organizational parameters, skipping the evaluation and selection steps.

# 7.3. Feedback Loop and Alpha-Beta Search

Ubinodes is constantly optimized by using the best-known parameters, called Hyperparameters, in all discovery processes without specific instructions. The only exception is new factors like local regulations, which introduce noise. This noise, through feedback, improves the self-play learning process, helping the search adapt and the organizational model change to fit the new hyperparameters.

In game play terms, this process is like Alpha-Beta Pruning, where no potential outcome is ignored and all consultants are seen as valuable contributors. This highlights the organization's focus on optimizing self-discovery and feedback loop functions. The quality of consulting work results from this inter-networking distribution, driven by the combination of self-discovery and the feedback loop.

# 7.4. Pruning and Streamlining the Search Process

During the search process, each consultant's position is defined by specific features like values, economy, mobility, regulation, safety, affinity, availability, qualification, and accreditation. These features are given weights through a mix of manual adjustments (conscious decisions) and automatic adjustments (unconscious or required factors). A linear evaluation of these weighted features results in a detailed description of each consultant's position.

Linear evaluation involves straightforward assessment, akin to adding one and one to make two. While suitable for "quit" positions with no unresolved conjectures, this evaluation method proves accurate for new candidates in traditional, monolithic, locallybased hierarchical structures. However, this textbook approach involving hypotheses, result evaluations, and selection processes often undermines and destabilizes organizations.

Page **29** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). In the specialized field of international import/export business, tactical situations are resolved through a quiescence search before applying the evaluation function. The project-managing consultant orchestrates a team structure optimization for optimal outcomes, devising a strategy outlined in the business plan. These strategic moves, referred to as variations, are akin to tactical maneuvers

The self-discovery process fills positions by evaluating each branch through a quiescence search, which looks deeper into "interesting" positions rather than "quiet" ones. This ensures there are no hidden problems and provides a more accurate estimate of the variation's value. Any sensible criteria can be used to distinguish "interesting" from "noisy" positions.

Pruning, essential to self-discovery, involves cutting out potential variations that don't affect the search result. Alpha-Beta, a backward pruning strategy, avoids dismissing consultants based on arbitrary criteria before the search is finished, which fits with the distributed organizational structure.

Forward pruning risks missing important factors that affect outcomes. It safely cuts branches likely overshadowed by others, such as consultants involved in conflicting projects. Aspiration windows improve pruning by allowing cuts based on regulatory environments or key variations, reapplying successful strategies.

Null move pruning involves using any consultant rather than leaving a position empty, while futility pruning discards variations that lead to inconclusive results. Domain-specific pruning rules also play a role, addressing factors like product-specific regulations and local laws.

Essentially, this game play theory emphasizes concentrating on promising strategies by exploring deeply for good ones and limiting exploration for less promising ones. This is guided by heuristics like past outcomes, peer interactions, and activity. Domain-specific rules, such as adjusting product designs to meet local requirements, are important. Reductions, different from pruning, involve methods that limit how deeply certain branches of the search tree are explored

# 7.5. Streamlining the Search Process and Leveraging Domain Knowledge

This search process depends a lot on domain expertise, which might seem different from more straightforward techniques like alpha-beta search or pruning. Because of this, only very experienced consultants in the organization can do reductions, showing how important local knowledge is compared to formal qualifications.

Alpha-beta search is affected by the order in which strategies are considered, a sequence decided by the strategic plan made together with the manufacturer. This highlights the importance of having a consultant close to the manufacturer to make sure strategies are implemented well.

Variations are organized using iterative deepening, which means starting with a shallow search to outline the big strategy and then digging deeper to explore specific strategies. Also, a mix of variations that work across different situations is used. These variations can improve the whole organization's performance by being reflected on. The process of transposition allows using variations again when similar situations come up in different parts of the organization, which saves time and spreads knowledge.

A carefully tuned knowledge platform is used to pick variations at the start of the project. Giving detailed feedback on how things end helps all consultants, no matter where they are, make the best moves, making sure the organization does well no matter when or where it is.

# 7.6. Inclusive and Knowledge-Driven Recruitment

Self-discovery, whether for team formation or consultant recruitment, is executed using an alpha-beta search, supplemented by pruning and, less frequently, reduction. This approach constitutes a self-play reinforcement learning mechanism wherein domain knowledge plays a pivotal role. Domain knowledge encompasses:

- The starting and final characteristics that describe a consultant's position and possible actions.
- Knowing the rules of the game, both for the project and the organization, helps simulate what might happen in different situations and decide when things should stop.
- Estimation of power, encompassing coercion, influence, and decision-making capabilities.
- Adjusting how much exploring is done depending on how many legal moves there are and how long the project will take.

Consultants aren't picked randomly just based on their qualifications. Instead, they're chosen through a thorough search, where any important criteria can be used to pick them. By understanding game play theory, we learn more about how the organization works. This is important because creating and running a distributed autonomous organization is very different and complex.

# 7.7. Trustzone: Bridging Performance and Security

To ensure services run smoothly on a fast, reliable, and safe network, the design needs to focus on usability and trustworthiness. This means separating trust from transactions, a concept called the Trustzone. Its goal is to give identification to parties, showing who owns property and intellectual rights and making them tradable. This unique mix gives

Page **31** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). the network a solid economic foundation based on clear rights, helping it grow and encouraging productive development.

The Trustzone works on a simple scale for identification and grows into multiple dimensions for services. This makes sure distributed services work well within a trustworthy and secure system. The network's structure is decentralized but its rules are centralized, making it efficient and effective.

# 7.8. Threat Model: Proactive Security

In terms of security, being proactive is crucial to address threats and lessen their impact before they happen. In a network, if one node acts harmfully, the security model depends on other nodes to prevent, counteract, and eliminate the negative effects, and also block the exploited path.

Traditional network setups, with central servers connected randomly to users, don't effectively solve the security issues that come with a reactive security approach. This model can't adequately handle the inherent vulnerabilities of reactive security.

To effectively address these limitations, a proactive security strategy is crucial. This approach focuses on identifying and tackling potential threats before they cause harm, rather than just reacting to them. Being proactive strengthens the network's resilience, reduces vulnerabilities, and creates a more robust and secure operational environment.

8. Economic Logic: Long Term Goals and Ubinodes Token



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# 8. Economic Logic: Long Term Goals and Ubinodes Token

Ubinodes has outlined three overarching long-term goals that drive its economic logic:

**1. Hub of Open International Business Consultants:** Ubinodes aims to be the main hub for international business consultants. It plans to create a network that helps consultants work together easily, reduces transaction issues, and builds an open and accessible market.

**2. Accelerating Development of Transnational Economy:** Ubinodes plans to boost the growth of a borderless, neutral, and censorship-resistant global economy. To achieve this, it will set up regulations and incentives to encourage participation, attract new consultants, and promote knowledge-sharing.

**3. Promoting Sustainable and Fair Economy:** Ubinodes aims to show that technology and commerce can help build a sustainable and fair economy without intrusive government interference. It plans to support projects that align with this vision and contribute to a global sustainable economy.

To achieve these goals, Ubinodes introduces the concept of the Ubinodes token, which plays a central role in its economic logic. The Ubinodes token is designed as a utility token with specific functions:

- **Transaction Medium:** The Ubinodes token is used for transactions among consultants within the network. It facilitates the exchange of services and financial transactions, including handling the exchange of physical goods.

- **Consumptive Use:** The Ubinodes token has consumptive use, meaning it is actively used within the network for various economic activities, contributing to its value and utility.

- **Token Release:** The release of Ubinodes tokens is linked to the network's transaction volume. As the network grows and more transactions take place, new tokens will be issued, maintaining a balance between token supply and demand.

The Ubinodes token supports Ubinodes' economic goals by enabling efficient and secure transactions, encouraging active participation, and fostering network growth and sustainability. By centering its economic system around the Ubinodes token, Ubinodes aims to create a thriving ecosystem. This will help it become a hub for international business consultants, drive transnational economic development, and promote a sustainable and fair economy.

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# 8.4 Token Utility: Achieving Key Specifications with a Native Token

The introduction of a native token within the Ubinodes ecosystem serves to fulfill important specifications that are essential for the network's functioning and success:

# 1. Permissionless International Payments:

Ubinodes aims to create a global marketplace for consultancy services, accessible to businesses and consultants worldwide. To ensure fair and open access, a single native token is used, independent of external economies and currencies. This avoids barriers posed by fiat currencies and protects against potential manipulation by governments.

# 2. Low Transaction Costs for Micro-Transactions:

As Ubinodes supports international consultancy services and promotes knowledge sharing, economies of scale, and higher transaction volumes, it will encourage a microtransaction-driven economy. Traditional fiat currencies often have high fixed transaction costs due to regulations. In contrast, a network based on micro-transactions benefits from a token made specifically for these transactions. This lowers costs and allows for new ways of creating value.

# 3. Fiduciary Guarantee and Risk Mitigation:

Ubinodes offers a reliable network for transactions and interactions. But in some cases, parties might need extra fiduciary services to protect against risks or losses in bigger transactions. Ubinodes' native token provides liquidity and can cover potential financial losses, making participants feel more secure and reducing risks. This level of protection is hard to achieve with third-party transfer values, like external fiat currencies or other cryptocurrencies.

# 4. Support for Ubinodes' Economic Goals:

Using a native token isn't just practical for certain functions; it also matches Ubinodes' main economic goals. It allows smooth cross-border transactions, helps grow a micro-transaction economy, and strengthens the network's ability to provide extra services and financial protection to its users.

By using a native token, Ubinodes can achieve its economic aims fully, creating a strong, efficient, and safe environment for global consultancy services.

# 8.5 Value of the Ubinodes Token: Driven by External Forces

The value of the Ubinodes token is influenced by many external factors and dynamics, not just the efforts of the core team. These factors play a role in shaping the token's value and its function within the Ubinodes ecosystem:

# 1. Independent Contribution:

The value of the Ubinodes token is closely connected to the range, quality, and accessibility of consultancy services provided on the platform. While the core developers build the basic structure and enhance the platform, the actual consultancy services are brought in by independent individuals and groups. This decentralized method ensures that the token's value is directly affected by the contributions and innovations of the wider community.

#### 2. Democratic Governance:

Token holders wield considerable influence in shaping the path of the Ubinodes platform. Through democratic governance mechanisms, they can make decisions that affect the organization. They have the ability to vote on important matters and rate services, which impacts the network's success and development. This active involvement strengthens the token's value by creating a cooperative and adaptable ecosystem.

#### 3. Market Forces:

The value of the Ubinodes token is linked to supply and demand dynamics. Supply is influenced by the creation of consultancy services, while demand is affected by factors like innovation and efficiency within and outside the network.

#### 4. Innovation and Demand Creation:

Ubinodes plans to provide diverse consultancy services, including innovative ones. These new offerings could create demand in untapped markets and offer better alternatives to existing solutions. Introducing unique services might increase demand for Ubinodes tokens, particularly if they outperform closed and centralized markets.

# 8.6 Use Case: Facilitating Consultancy Services and Network Dynamics

The Ubinodes token serves as a fundamental component within the Ubinodes ecosystem, facilitating the exchange of consultancy services on a global scale. The token's utility is realized through various use cases:

# **Consultancy Services Smart Contracts:**

When a user needs consultancy services, a smart contract is made to outline the job terms. Typically, these contracts involve using Ubinodes tokens for the services provided by consultants. This smooth process simplifies transactions and guarantees a direct, hassle-free exchange of value between clients and consultants.

# **Complex Dynamics and Cross-Projects:**

As the Ubinodes network expands, we anticipate more sophisticated dynamics to develop. Services won't just be exchanged between clients and consultants but also among consultants themselves, encouraging collaborations across projects. These more

Page **36** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). complex interactions will also be facilitated by the Ubinodes token, adjusting to the changing requirements of the network.

#### **Decentralized Exchanges and Brokerage:**

To simplify the purchase and sale of Ubinodes tokens, decentralized exchanges or brokerage services can be employed. This minimizes obstacles and guarantees the token's accessibility in the broader market.

#### **Balancing Technology Maturity and Principles:**

Ubinodes is dedicated to employing technology in line with its core values. This means smart contract adoption is consensus-driven among network participants and the technology is mature enough to meet Ubinodes' needs. The organization appreciates consultant diversity and ensures that technologies, like smart contracts, improve internetworking rather than impede it.

#### **Decentralized Decision-Making:**

While smart contracts handle automated tasks, Ubinodes recognizes that certain decisions need human input and agreement. Smart contracts execute set actions, but the organization's governance remains decentralized and inclusive, with network participants contributing to decision-making.

#### Blockchain for Human Benefit:

Ubinodes stresses that technology, such as blockchain and smart contracts, should enhance human well-being and foster a fairer, more efficient environment. Its adoption of technology is guided by a dedication to nurturing a supportive and collaborative network of consultants.

#### 8.9 Digital Curation in Ubinodes

Digital curation is vital for Ubinodes in managing and improving the quality of information and data in its decentralized setup. By following digital curation principles, Ubinodes seeks to maintain the long-term availability, accessibility, and significance of its digital resources. This approach contributes to the organization's success and sustainability.

#### **Preservation and Maintenance:**

Digital curation involves the careful selection, preservation, and maintenance of digital assets. In the context of Ubinodes, this includes the information, data, and knowledge generated by its network of consultants. By actively curating these digital assets, Ubinodes aims to prevent digital obsolescence and ensure that valuable information remains accessible and usable over time.

#### Adding Value and Quality:

Page **37** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). Digital curation aims to enhance the value of digital repositories. In Ubinodes, this translates to constantly refining the quality of information and data accessible to its consultants. Through curation and organization of digital assets, Ubinodes enriches its knowledge base, enabling better decision-making and collaboration among network participants.

#### **Decentralized Curation:**

In Ubinodes' decentralized setup, digital curation is performed by network nodes, including consultants. They actively contribute to ensuring the accuracy, currency, and relevance of information. This collaborative effort taps into the diverse expertise of network participants to uphold the integrity of Ubinodes' digital assets.

#### **Incentives for Curation:**

Ubinodes values cooperation among its network participants but acknowledges the importance of incentives in motivating behavior. To encourage effective digital curation, Ubinodes introduces incentives within contracts. Consultants involved in the curation process may receive rewards, reflecting the organization's commitment to fairly compensating participants for their contributions.

#### Long-Term Accessibility:

Ubinodes aims to secure the long-term usefulness of its digital assets through effective curation. By maintaining a top-notch knowledge base, Ubinodes supports the sustainability and triumph of its decentralized organization. As the network expands, digital curation will continue to be crucial for Ubinodes' ongoing operations and strategic development.

#### 8.10 Beneficial Projects in Ubinodes

Beneficial projects play a significant role in Ubinodes' mission to create a positive impact on both its organization and the broader community. These projects are designed to align with Ubinodes' core values, foster a sense of togetherness among participants, and contribute to the growth and culture of the decentralized organization.

#### **Creating Positive Outcomes:**

In Ubinodes, beneficial projects strive to create positive impacts that benefit both the organization and humanity at large. These initiatives surpass typical business goals, tackling societal issues, advocating for sustainability, and promoting positive values.

#### **Promoting Core Values:**

Beneficial projects in Ubinodes are deeply rooted in the organization's core values, which encompass collaboration, innovation, inclusivity, and social responsibility. These initiatives offer a platform to uphold and promote these values, allowing participants to play a role in shaping and reinforcing Ubinodes' cultural identity.

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#### Favorable Deployment:

Beneficial projects in Ubinodes are crucial for aligning the organization with its mission and values. By prioritizing initiatives that make a positive impact on stakeholders, Ubinodes stays true to its purpose and continues to contribute meaningfully to society as it grows.

#### **Incentives and Rewards:**

Participants in beneficial projects receive Ubinodes tokens as rewards, granting them voting rights within the organization. The distribution of these rights is decided through a self-governance process, considering factors like project complexity and importance. This encourages active involvement in projects that further Ubinodes' mission and development.

#### **Community Engagement:**

Engagement in beneficial projects cultivates a strong sense of community within Ubinodes. Through collaborative efforts on meaningful initiatives, participants build connections, exchange knowledge, and collectively propel the organization forward.

#### Pre-Agreed Scale and Governance:

The process of allocating voting rights and rewards for beneficial projects is transparent and driven by self-governance within Ubinodes. A predetermined scale ensures fairness and consistency in distributing rewards, empowering participants to influence the organization's trajectory.

#### **Measuring and Fostering Beneficial Projects in Ubinodes**

Creating a systematic approach to measure and promote beneficial projects within the Ubinodes community is crucial for ensuring alignment with the organization's values and mission. The ethical framework for determining the "beneficial" nature of projects should be clear, understandable, and accessible to all parties involved. While the economic impact of beneficial projects may not be immediately apparent, their significance lies in their potential to contribute to Ubinodes' growth and impact over time. Here's a framework for measuring and fostering beneficial projects:

#### 1. Clear Ethical Guidelines:

Create a set of ethical rules that explain how to decide if a project is 'good.' These rules should cover things like how the project affects society and the environment, and if it matches Ubinodes' main beliefs and goals.

#### 2. Transparent Evaluation Process:

Page **39** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). Set up a clear way to decide which projects are 'good.' This method should include the Ubinodes community, letting people suggest, talk about, and vote on projects that fit the rules we've made.

#### 3. Impact Assessment:

Please evaluate each proposed project thoroughly to understand its potential effects. Take into account factors like how it benefits society, its impact on the environment, how engaged the community is, and the positive outcomes it could have in the long run. Rate or score each project based on its potential impact.

# 4. Economic Value Creation:

Although beneficial projects might not yield significant immediate economic gains, it's important to acknowledge their potential for long-term value creation. As the Ubinodes network's economy expands over time, the value of these beneficial projects will also rise, thereby enhancing the organization's sustainability and overall impact.

# 5. Encouraging Diversity and Innovation:

Encourage consultants to embrace diversity and innovation by exploring new avenues and ideas while executing beneficial projects. Introducing a variety of activities enriches the knowledge pool within the network, cultivating a dynamic and adaptable environment.

# 6. Collaborative Decision-Making:

Engage the Ubinodes community in the decision-making process regarding beneficial projects. Provide opportunities for participants to share their opinions, offer ideas, and collectively determine which projects best align with Ubinodes' mission and values.

# 7. Long-Term Vision:

Acknowledge that the full impact of beneficial projects may become evident gradually. Highlight the long-term vision of promoting positive change and contributing to societal improvement, even if immediate economic gains are not the primary objective.

#### 8. Continuous Improvement:

Consistently assess and improve the ethical guidelines and evaluation procedures for beneficial projects. Adapt to evolving circumstances, community feedback, and emerging best practices in social impact.

By establishing a structured method to gauge and support beneficial projects, Ubinodes can cultivate a culture of positive change, engagement, and collaboration within its community. Although immediate economic gains may not be apparent, the long-term impact on Ubinodes' development, reputation, and societal contribution can be significant.

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#### **Determining Beneficial Tasks in Ubinodes**

In the Ubinodes network, the identification and certification of beneficial projects adhere to a democratic and community-driven approach. Any node within the network can propose a potential "beneficial" project, and its classification as beneficial is determined through a voting procedure. Here's the process for determining beneficial tasks:

# 1. Proposal Submission:

Any participant within the Ubinodes network can propose a project that they believe aligns with Ubinodes' mission and values, and that can have a positive impact on the organization and society.

#### 2. Democratic Voting:

Once a project proposal is submitted, other nodes within the network have the opportunity to review and vote on the proposal. This voting process is purely democratic, allowing all nodes to have a say in the decision-making.

# 3. Certification Threshold:

A specific number of votes or a predetermined threshold of support is necessary for a project to qualify as "beneficial." This threshold is established by the Ubinodes community and guarantees that consensus is achieved before a project is officially certified as beneficial.

#### 4. Allocation of Tokens:

When a project reaches the certification threshold, a specific allocation of Ubinodes tokens is made available for the execution of the project. This allocation is used to provide incentives and rewards for participants involved in the beneficial project.

# 5. Web-Based IT Tools and Voting:

Web-based IT tools are employed for proposing, discussing, and voting on beneficial projects. These tools enable transparent and efficient communication among network participants, ensuring that the democratic process is accessible and user-friendly.

#### 6. Focus on Value and Transparency:

Unlike traditional centralized organizations, Ubinodes prioritizes delivering value directly to consultants and manufacturers, rather than intermediaries. Back office tasks, known as digital curation, are crucial for upholding the quality and accessibility of data and information within the network.

# 7. Monthly Maintenance Fee:

To sustain the network's operations and maintenance, clients are charged a fixed monthly maintenance fee. This fee is evenly distributed among clients and helps ensure the platform's overall sustainability. As more manufacturers join the network, the fee's impact diminishes, thereby encouraging additional participation.

# 8. Incentivizing Growth:

The fee structure encourages manufacturers to recommend other manufacturers to join the network. As the network expands and more participants join, the fees are spread across a larger user base, potentially reducing costs for everyone involved.

By employing a democratic voting process and leveraging web-based IT tools, Ubinodes guarantees that beneficial projects are selected through transparent, community-driven decision-making. This approach aligns with Ubinodes' mission to foster positive outcomes and collaborative initiatives within its decentralized organization. 9. Multi-Signature Wallets: How Ubinodes Works: Multi-Signature Wallets, Witnesses, and Oracles



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# 9. Multi-Signature Wallets: How Ubinodes Works: Multi-Signature Wallets, Witnesses, and Oracles

In the Ubinodes ecosystem, multi-signature wallets and contracts are vital for securing and facilitating transparent transactions. These arrangements require multiple parties to sign off on a transaction before it can be executed. There are two main scenarios for multi-signature contracts:

# Scenario 1:

Involves three parties: the buyer, the seller, and a witness. For a transaction to be completed and funds released, a 2 out of 3 signing threshold is required. This means that at least two out of the three parties must sign the transaction.

#### Scenario 2:

Involves four parties: the buyer, the seller, a witness, and an oracle. Similar to Scenario 1, a 2 out of 4 multi-signature contract is used. However, in this case, both the oracle and the witness must sign the transaction for the funds to be released. The addition of an oracle introduces an external source of validation.

#### 9.2 Witnesses and Oracles

#### Witnesses:

Witnesses play a crucial role in verifying transactions and upholding the integrity of the Ubinodes network. They are randomly chosen from a pool of volunteers and do not receive monetary compensation. Instead, they are rewarded with voting rights, which increases their influence within the organization. If a witness fails to provide valid validation or acts dishonestly, they may not receive compensation and could be replaced by the next available witness.

Witnesses are not influenced by financial incentives, as they do not receive payment from any party involved in the transaction. Their objective is to ensure the honesty and transparency of the network. Witnesses can verify various types of contracts, including service-only contracts, and their location is not a limiting factor as long as they can observe all communication and information.

#### Oracles:

Oracles, on the other hand, are third-party service providers tasked with verifying tangible events. Unlike witnesses, oracles receive compensation for their services as per

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#### **Transaction Validation:**

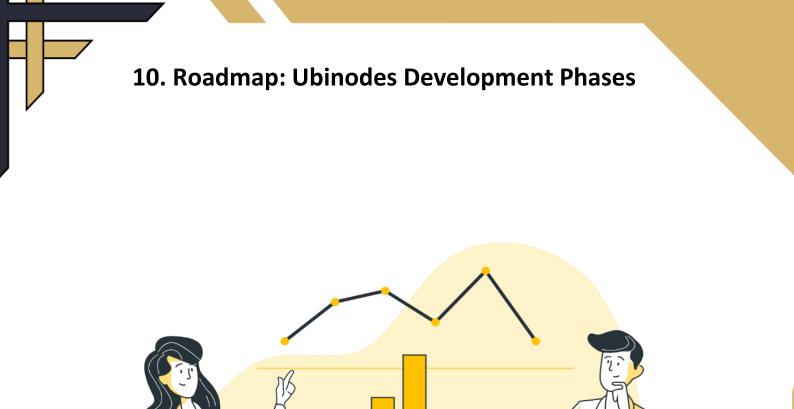
Both witnesses and oracles are involved in validating transactions, especially in multisignature contracts. Their validation ensures the completeness and soundness of a transaction:

- **Completeness:** If a statement is true, an honest verifier (witness or oracle) can be convinced of its truthfulness by an honest prover (party initiating the transaction).

- **Soundness:** If the prover (party initiating the transaction) is dishonest, they cannot convince an honest verifier (witness or oracle) of the transaction's validity.

In certain situations, multi-signature contracts might necessitate the participation of witnesses or oracles to validate particular conditions before funds are released, thereby bolstering the security and reliability of transactions.

By employing multi-signature contracts, along with witnesses and oracles, Ubinodes strives to establish a secure and transparent environment for transactions and interactions within its decentralized network.



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# 10. Roadmap: Ubinodes Development Phases

#### 10.1 Ubinodes: Bootstrapping

The development of Ubinodes follows a strategic roadmap to ensure the successful establishment and growth of the platform. The initial stages involve building the foundation for the decentralized marketplace:

#### **Demand Assessment:**

The first step is to assess the demand for Ubinodes' consultancy services. This involves identifying potential users and understanding their needs and preferences.

#### **Supply Creation:**

In the case of Ubinodes, the supply is readily accessible through the forking of Love4aviation, an established company with a substantial subscriber base. This grants access to an existing network of consultants and professionals that can be utilized for the Ubinodes platform.

# 10.2 Ubinodes: Deployment

Once the foundation is established, Ubinodes moves into the deployment phase, where the platform is developed and deployed to cater to users with varying levels of connectivity and economic development:

#### **Global Reach:**

Ubinodes strives to involve consultants from various parts of the globe, irrespective of their countries' economic status. Consultants from developed, transitioning, and developing economies will all contribute to the network, fostering diverse and innovative inter-networking patterns.

#### Exchange of Experience and Services:

Consultants, manufacturers, and other participants within Ubinodes can exchange experiences, services, and knowledge. Financial exchanges for goods and services can be carried out using tokens, enabling a seamless and adaptive organization.

#### Adaptive and Knowledgeable Organization:

The platform's structure allows for local economic transactions, even in areas with limited internet connectivity, empowering consultants to collaborate and trade efficiently.

#### **Reputation Mechanism:**

Page **47** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). To foster trust and credibility within the network, Ubinodes introduces a reputation and rating system. This system enables participants to evaluate the reputation of consultants, manufacturers, and external service providers, thereby facilitating informed decision-making and network governance.

As Ubinodes progresses, the reputation and rating system will be continuously improved to adapt to the evolving needs of the network and its participants.

The roadmap delineates a phased strategy for constructing a resilient and inclusive decentralized marketplace for consultancy services. By capitalizing on existing resources, accommodating diverse economic circumstances, and promoting a reputation-based system, Ubinodes endeavors to establish a flourishing ecosystem that enriches all participants.

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# **11. Democratic Governance**

Ubinodes embraces democratic governance as a fundamental principle to guide network operations and decision-making. The democratic mechanisms within the network are similar to a "proof of contribution" model, which takes into account the reputation and number of completed contracts of each participant. This approach ensures that decisions are made collectively and reflect the interests of the network's diverse participants.

# 11.4 Know Your Customers (KYC)

Ubinodes employs a decentralized Know Your Customer (KYC) methodology, shifting the verification process from a central authority to a decentralized network of nodes. A "verification federation" is established, consisting of nodes that are democratically approved to perform KYC functions. This approach aims to strike a balance between decentralized control and protection against potential exploitation by external entities.

# 11.5 On-Boarding

On-boarding new consultants onto the Ubinodes network is a streamlined process facilitated by technology and communication tools:

# Initial Communication:

When a new consultant joins the network, they establish communication with root nodes, which provide information about the network and its peers.

# **Technology Installation:**

The new consultant installs the necessary technology used by the organization, ensuring compatibility with the network.

#### **Creating a Wallet:**

A cryptocurrency wallet is created for the consultant, complete with a public key, token account, and a description of their skillset.

#### **Register of Services:**

A centralized register stores advertisements of available services within the network. Consultants can access this register to search for service providers and validate their availability for specific services.

# **Collaboration Tools:**

Ubinodes utilizes specialized communication tools tailored to various aspects of the on boarding process. These tools are designed to communicate the list of services provided, collaboration specifications, and any necessary requirements for each offering.

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#### **Automated Monitoring:**

In cases where a consultant becomes inactive for an extended period, the network automatically considers them as gone. This ensures that the network remains dynamic and reflects the active participants.

Through these steps, Ubinodes ensures that new consultants can seamlessly join the network, advertise their services, collaborate with others, and contribute to the organization's growth and success.

#### 11.6 Dynamics of Providing Services

In the Ubinodes network, the dynamics of providing services are facilitated by a structured process that involves consultants offering their services to clients and potentially collaborating with other consultants. Here's how the process unfolds:

#### 1. Consultant's Responsibilities:

When a consultant joins the network, they create advertisements for the services they offer. These ads contain details about how the consultant charges clients, accepts data, communicates, and delivers results. Consultants also communicate their capacity to perform specific services and provide updates if they are unable to fulfill any services.

#### 2. Browsing and Searching:

Consultants looking for services or sub-services can browse through advertisements of other consultants, searching for suitable service providers to fulfill their needs.

#### 3. Job Offers and Negotiations:

A job offer is initiated by a consultant, usually comprising a price proposal and a readiness query. Clients and manufacturers can either accept the proposed price or make a counter-offer. If a consultant has stated a price in their advertisement, clients and manufacturers are expected to adhere to it. Negotiations may also involve conversations about data transfer methods.

#### 4. Creation of Contract and Escrow:

Once an offer is agreed upon, a contract is created and linked to an escrow account. An optional witness may be named to arbitrate conflicts if needed. The escrow account ensures that the agreed-upon funds are held securely until the job is completed.

#### 5. Service Execution and Completion:

The chosen consultant performs the service, adhering to the agreed-upon terms and conditions. Once the job is successfully completed and the client receives the desired

Page **51** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). results, the funds held in the escrow account are released to the consultant who provided the service.

# 6. Client Ratings:

After completion, the client has the opportunity to rate the provider's performance. These ratings are aggregated, publicly available, and stored in the consultant's profile. This allows prospective clients and partners to view the consultant's track record and performance.

# 7. Communication and Asynchronous Synchronization:

Communication between consultants is straightforward and efficient. The contractor, whether a client or a manufacturer, can initiate new job requests and confirm the consultant's availability and readiness to execute the task. Asynchronous synchronization enables seamless communication of status updates and results.

The Ubinodes network simplifies the process of connecting clients with consultants, negotiating terms, ensuring payment security, and facilitating service execution. Through this structured approach, consultants can offer their expertise and services, while clients benefit from a transparent and dependable platform for accessing the services they require.

#### 11.7 Monthly Maintenance Fee:

The Ubinodes platform recognizes the significance of sustainable funding for its ongoing development and expansion. To guarantee the project's viability and sustain a dedicated development team, a monthly maintenance fee is introduced. This fee serves multiple purposes and promotes fairness among customers by:

**1. Sustainable Development:** Numerous promising projects in the blockchain sphere encounter challenges in securing consistent funding, which can impede their advancement and potential growth. Ubinodes seeks to circumvent this issue by establishing a reliable income stream through the monthly maintenance fee. This approach guarantees that the project can sustain a full-time development team and evolve continuously over time.

**2. Equal Access and Fairness:** Ubinodes offers a network that benefits all users, regardless of whether they actively engage with the platform. Through the implementation of a monthly maintenance fee, all customers contribute equally to the platform's maintenance and expansion. This promotes fairness, as all users enjoy equal access to the network's resources and advantages.

Page **52** of **54** Last Revised 29 December 2023. Copyright: European Union Public License, version 1.2 (EUPL-1.2). **3. Encouraging Activity:** The monthly maintenance fee replaces the need for transaction fees within the network. This structure incentivizes activity within the platform, as users are encouraged to engage with the network's services and offerings without incurring additional transaction costs. This dynamic contributes to the overall value and vibrancy of the organization.

**4. Virtuous Circle:** The monthly maintenance fee creates a positive feedback loop. As more users join and contribute, the network becomes stronger, offering more benefits and opportunities. This, in turn, attracts more users, leading to a self-sustaining cycle of growth and value creation.

By implementing a monthly maintenance fee, Ubinodes aims to ensure its long-term sustainability, foster equal access to benefits, encourage active participation, and create a self-reinforcing cycle of growth and value generation within the network.

#### 11.8 Adoption Path

The shift from the existing financial system to a comprehensive token-based economy, where cryptocurrency gains widespread acceptance and usage, requires a strategic and phased approach. Ubinodes envisions a pathway to adoption that focuses on elucidating the incentives and advantages for individuals and businesses to adopt cryptocurrency usage. This strategy emphasizes practical use cases, cost savings, and potential profits to incentivize adoption.

**1. Comprehensive Token Economy:** Ubinodes acknowledges the significance of establishing a robust token-based economy within the organization. This entails conducting all financial transactions, such as wages, remittances, rent, and other economic activities, using the native Ubinodes token. By demonstrating the advantages and efficiency of cryptocurrency transactions within the organization, Ubinodes lays the foundation for broader adoption.

**2. Simple and Practical Solutions:** The market values simple and practical solutions that tackle real-world issues. Ubinodes recognizes that maintaining distributed autonomous organizations (DAOs) can be complex, so it prioritizes straightforward solutions that align with users' needs. By concentrating on tangible benefits and user-friendly interfaces, Ubinodes aims to attract a wider user base.

**3. Profit Incentive:** To drive adoption, Ubinodes acknowledges the importance of offering a transparent profit incentive for users to embrace cryptocurrency. Users are more inclined to transition to a new financial system when they perceive potential profits or cost savings. By showcasing how cryptocurrency usage can result in decreased fees, more streamlined international transactions, and other financial advantages, Ubinodes aims to persuade users of the value proposition.

**4. Practical Use Cases:** Ubinodes identifies practical use cases where cryptocurrency adoption can offer significant advantages. For example, by enabling remittances and international trade with reduced fees and faster transaction times, Ubinodes demonstrates how businesses and individuals can benefit from using its cryptocurrency.

**5. Diversity and Ecosystem:** Ubinodes envisions a diverse crypto ecosystem where multiple types of transactions can be conducted using cryptocurrency. By eliminating the need for foreign exchange and reducing reliance on traditional banking systems, Ubinodes aims to create an environment where individuals and businesses find it advantageous to use its cryptocurrency.

**6. Gradual Implementation:** Ubinodes intends to roll out its adoption strategy gradually, introducing new features and functionalities in stages to showcase the benefits of cryptocurrency usage. This includes enabling cryptocurrency withdrawals to credit cards or from ATMs, making it easier for users to access and utilize their digital assets.

By addressing user motivations, providing practical solutions, emphasizing profit incentives, demonstrating use cases, and adopting a staged approach, Ubinodes aims to pave the way for widespread adoption of its cryptocurrency and the establishment of a comprehensive token-based economy.